



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RBA9937-5
Job Sheet 170134



1 March
Order 2169
D

Part No: RBA9937-5

Job Qty: 2 ea

Part Name: Tail Rotor Nut Wrench "C" Model (Rb Design)



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/10/18

Job Tracking No:

Due Date: 1/19/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Customer: Science & Engineering Services Inc (CSCIE01)

6992 Columbia Gateway Drive, Suite 200 Columbia, AL, 21046 USA ph:(256) 258-0501

Note: DWG RBA9937-5 Rev 4 IPP Rev A 18.01.10 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	2 Ea	1/18/18	1/18/18	0.00	0.00	Start Up Waterjet		SC 18/01/11
110	Waterjet	2 pcs	1/19/18	1/19/18	0.00	0.17	Waterjet 2 OMAX		SC 18/01/11
120	QC	2 pcs	1/19/18	1/19/18	0.00	0.00	QC2 Waterjet-4		SC 18/01/11
130	QC	2 pcs	1/19/18	1/19/18	0.00	0.00	QC8-6		38
150	Outsource	2 pcs	1/19/18	1/19/18			MEI001-VC Outsource 1		AT 18/02/15
160	Outsource	2 pcs	1/19/18	1/19/18			GRO002-VC Outsource 2		AT 18/02/15
190	Packaging	2 pcs	1/19/18	1/19/18	0.00	0.00	Packaging2		AT 18/02/15
200	QC	2 pcs	1/19/18	1/19/18	0.00	0.00	QC6		38
210	Packaging	2 pcs	1/19/18	1/19/18	0.00	0.00	Packaging3-1 GA	DAS 21	OFF FEB 16 2018
220	QC21-SA	2 Ea	1/19/18	1/19/18	0.00	0.00	QC21		FEB 16 2018

Part Op 110 - 1-Cut as per Dwg Dwg Rev: 4 Prog Rev: 4 (Red Barn folder) 2-Deburr if necessary JAN 23 2018
Descriptions: 130 - Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG.
150 - HEAT TREATING 1--Issue P/O to Metcor ; P/O 038843 RC 45-47 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Altech
160 - -Issue P/O to Groupe Altech; PO 038848 -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required
JAN 23 2018
24

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	M4130NS.188	0	0	0	0

Part Specifications

Specifications could not be found.

DART
AEROSPACE
S031402


Tail Rotor Nut Wrench "C" Model (Rb Design)

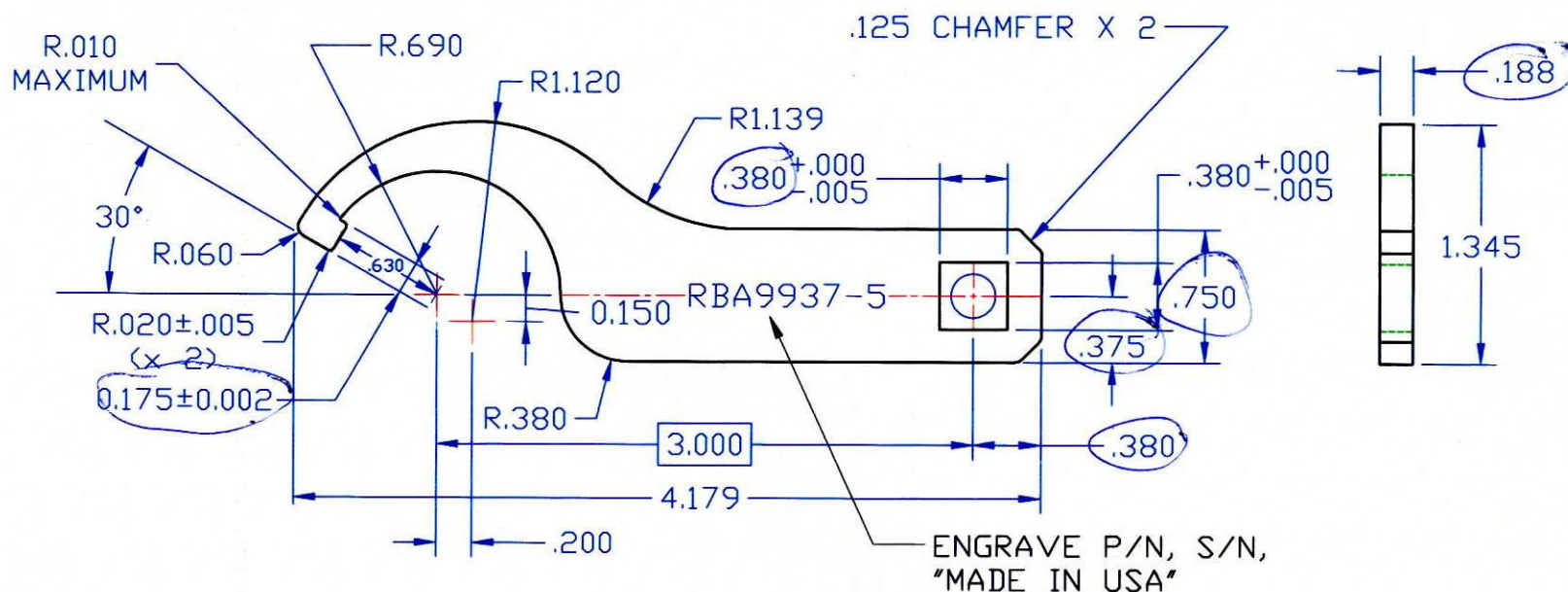
PART NO: RBA9937 - 5
Revision:
Operation: Start up Operation
Change No:

Mfg Date: 01/11/18
Job No: 170134

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

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REVISIONS				
REV	DESCRIPTION	DATE	INITIAL	APPR
A	DRILLED HOLE & MANUFACTURING NOTE ADDED	7/11/01		
B	DRILLED HOLE SIZE & LOCATION UPDATED TO MATCH OTHER SPANNER WRENCHES, MANUFACTURING NOTES UPDATED TO REFLECT CURRENT PRACTICE.	3/15/09		
3	CH'D SIZE OF SQUARE DIM'S, ADDED ENGRAVE P/N, S/N, 'MADE IN USA'	4/24/09	RJC	R
3A	DELETED THREE MANUFACTURING NOTES, ADDED NOTE Δ PER R.W.	8/26/11	RJC	R
4	DELETED MANUFACTURING AND EDM NOTES. CH'D MANUFACTURING METHOD WAS EDM IS WATERJET.	4/1/13	BIM	G



SHOP COPY
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 170134 MWS
1801-10

NOTES

Δ MATERIAL MAY VARY DEPENDING ON COMMERCIAL AVAILABILITY.

RED BARN MACHINE

TITLE TAIL ROTOR NUT WRENCH -

DWG NO. RBA9937-5

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS .XXX ± .010 FRACTIONS ± 1/32 ANGLES ± 5°
DRAWN BY: ROBERTS
APPROVED: *D. M.*
TREAT 45-47 Rc
FINISH BLACK ZINC
SPEC

UNLESS OTHERWISE SPECIFIED
1. BREAK ALL SHARP EDGES
.015 x 45° PR .015 R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
SCALE 1 : 1 DATE 7-11-01 SHEET 1 of 1
USED ON MODEL MD-500C, 269

ASSY QTY	QTY	B/O PART #	UNIT QTY	DESCRIPTION	MATERIAL	B/O INFORMATION OR SPECIFICATIONS
			1	WRENCH	4130/4140 Δ	3/16 x 1-1/2 x 4-3/8

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
324791	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

GROUP ALTECH

2455 ALPERN

ST LAURENT

QC H4S1N9

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38843	N/A	4130		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
SEL HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results				
HARDNESS		45 - 47 HRC	4	46 - 47 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
4	1	RBA9937-5 ② RBA9937-5 JOB. 170134 ② RBA9937-5 JOB. 170135 1 SAC DE PAPIER		

COMMENTAIRES / comments

SALT HARDEN 1600F, 30 MIN

TEMPER 500F, 3 HRS

TEMPER 550F, 3 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

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Isabel Otero
AA Technician



02 FFV 2010



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO038843**

Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO038843

PO Date: 1/23/18

Due Date: 1/30/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Phone:

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
JAN 26 2018

REVISED \$

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	170134	RBA9937-5	Tail Rotor Nut Wrench "C" Model (Rb Design) HEAT TREATING 1--Issue P/O to Metcor ; P/O _____ RC 45-47 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Altech	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$75.00/pcs	\$150.00

Line Item Note Parts made from 4130N Sheet .188
Ship Directly to Groupe Altech

2	170135	RBA9937-5	Tail Rotor Nut Wrench "C" Model (Rb Design) HEAT TREATING 1--Issue P/O to Metcor ; P/O _____ RC 45-47 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Altech	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$75.00/pcs	\$150.00
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Line Item Note Parts made from 4130N Sheet .188
Ship Directly to Group Altech

1/26/2018

PURCHASE ORDER

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	169324	RBD29823-5A	Tail Rotor Nut Wrench "D" Model (New Design) HEAT TREATING 1--Issue P/O to Metcor ; P/O _____ RC 44-47 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER Metcore to ship directly to Groupe Altech	Firmed	1/30/18	4 pcs	0 pcs	4 pcs	\$75.00/pcs	\$300.00
Line Item Note Parts made from 4130N sheet .188 Ship directly to Group Altech										
4	170019	RB877528-4-7	6 Tooth Cutter P/O to Metcor P/O _____ Heat treat to RC 50-60, Bead blast after heat treat, part made from drill rod O1 Certificate of Conformity required ship directly to KG grinding	Firmed	1/30/18	5 pcs	0 pcs	5 pcs	\$60.00/pcs	\$300.00
Line Item Note Parts made from T-01 Round 0.750 ship directly to KG Grinding										
5	168220	646.3013	Blade HEAT TREAT AS PER DWG, SEE NOTE #3 ISSUE P/O: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	1/30/18	12 pcs	0 pcs	12 pcs	\$3.324468/pcs	\$39.89
6	168222	646.3015	Blade FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As per dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL DETAIL OF C OF C REQUIRED	Firmed	1/30/18	12 pcs	0 pcs	12 pcs	\$3.324468/pcs	\$39.89
7	168230	646.3314	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24

1/26/2018

PURCHASE ORDER

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
8	168231	646.3315	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24
						✓ 10x	AT 18/02/05			
9	168232	646.3316	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	1/30/18	10 pcs	0 pcs	10 pcs	\$3.324468/pcs	\$33.24
						✓ 10x	AT 18/02/05			
10	168266	646.9711	Blade PO to Metcor: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	1/30/18	40 pcs	0 pcs	40 pcs	\$3.32447/pcs	\$132.98
						✓ 40x	AT 18/02/04			
									Grand Total: \$1,212.50	

Order Notes

Procurement Quality Clauses
 A005 right of entry
 A012 chemical and physical test report
 A016 personnel qualification
 A017 raw material identification (as applicable)

A022 Apical Processing
 A024 process certifications
 A026 certification of material conformance

A041 quality management system
 A042 dart notification by supplier
 A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit
www.dartaerospace.com for further explanation.

Plex 1/26/18 8:31 AM dart.lavoie.chantal



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038848

Supplier: GRO002-VC
Group Altech
2455 Halpern
St Laurent
QC
H4S 1N9 Canada
Phone: 514-335-3666
Fax: 514-335-3868

PO No: PO038848

PO Date: 1/24/18

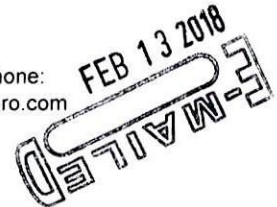
Due Date: 2/20/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Baker, Diane
Phone: dbaker@dartaero.com



Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	170134	RBA9937-5	Tail Rotor Nut Wrench "C" Model (Rb Design) -Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$15.00/pcs	\$30.00
						✓	2x	A1 18/02/15		
2	170135	RBA9937-5	Tail Rotor Nut Wrench "C" Model (Rb Design) -Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	1/30/18	2 pcs	0 pcs	2 pcs	\$15.00/pcs	\$30.00
						✓	2x	A1 18/02/15		
3	169324	RBD29823-5A	Tail Rotor Nut Wrench "D" Model (New Design) -Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	1/30/18	4 pcs	0 pcs	4 pcs	\$15.00/pcs	\$60.00
						✓	4x	A1 18/02/15		

Grand Total: \$120.00

Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

METCOR INC.

80 BOUL. ARTHUR SAUVÉ, STEUSTANT, QC, J7R 5A8

Tél. 450-473-1884

Télécopieur / Fax administration: 450-491-6498

Télécopieur / Fax production: 450-491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
324791	1

CLIENT / Customer: 215

SECTEUR / Sector: AEROSPACE

PROJET / Project: ALBERDEEN

PROVINCE / Province: QUEBEC

ON 26A 1K7

LIVRÉ À / Shipped to:

GROUP ALTECH

2465 ALBERN

ST LAURENT

QC H4S1N9

DEMANDÉ / DU CLIENT customer po	CLASSIFICATION PIÈCE part classification	MATÉRIEL material	MAÎTRE D'ŒUVRE prime contractor	PROG. / M
39833	N/A	3130		

SPECIFICATIONS DU PROCÉDÉ

processing specifications

REMARKS:

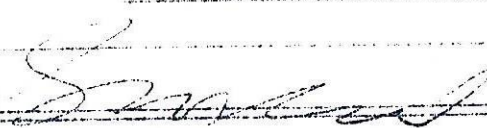
WARMEN AND TEMPER

AGENCE / requirement	SPECIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS / TESTED, units
WARMNESS	45 - 47 HRC	4	46 - 47 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
1	1	RBA0937-5 (2) RBA0937-5 JOB. 170134 (2) RBA0937-5 JOB. 170135 1 SAC DE PAPIER

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2018-02-02